DETAILED ACTION

1.   An examiner's amendment to the record appears below. Should the

changes and/or additions be unacceptable to applicant, an amendment may be

filed as provided by 37 CFR 1.312. To ensure consideration of such an

amendment, it MUST be submitted no later than the payment of the issue fee.

2.   Authorization for this examiner's amendment was given in a telephone

interview with Mr. Paul J. Skwierawski on 01/28/2010.

3.   The application has been amended as follows:

- Claim 1 has been amended as following:

1. (Currently Amended) A packet data serving node for connecting a
communication terminal device to a public network by using Point to Point
Protocol (PPP), the packet data serving node supporting a plurality of layer 3
protocol types, comprising:
        Link Control Protocol (LCP) phase processing means;
        Network Control Protocol (NCP) phase processing means;
        decision means for deciding a layer 3 protocol type of a reception PPP
packet; and
        control means, wherein, ~~when performing a PPP connection prescribed in~~
~~RFC1661,~~ <u>when performing a PPP connection</u> in a NCP phase after an LCP
phase is completed, the control means controls the NCP phase processing
means not to transmit any NCP start request message to the communication
terminal device before receiving a NCP start request message from the
communication terminal device,
        the decision means receives the NCP start request message from the
communication terminal device, and refers to a protocol field in the received NCP
start request message to decide the layer 3 protocol type used by the
communication terminal device, and

the control means controls the NCP phase processing means to transmit a
NCP connection permission message set corresponding to the layer 3 protocol
type decided by the decision means and a NCP start request message of the
layer 3 protocol type decided by the decision means to the communication
terminal device.

- Claim 2 has been amended as following:

2. (Currently Amended) A packet data serving node for connecting a
communication terminal device to a public network by using Point to Point
Protocol (PPP), comprising:

   Link Control Protocol (LCP) phase processing means;

   a plurality of Network Control Protocol (NCP) phase processing means for
supporting different layer 3 protocol types respectively;

   decision means for deciding a layer 3 protocol type of a reception PPP
packet; and

   control means, wherein, ~~when performing a PPP connection prescribed in
RFC1661,~~ when performing a PPP connection in a NCP phase after an LCP
phase is completed, the control means controls the NCP phase processing
means not to transmit any NCP start request message to the communication
terminal device before receiving a NCP start request message from the
communication terminal device,

   the decision means receives the NCP start request message from the
communication terminal device, and refers to a protocol field in the received NCP
start request message to decide the layer 3 protocol type used by the
communication terminal device, and

   the control means selects one of said NCP phase processing means
corresponding to the layer 3 protocol decided by the decision means, and makes
said selected NCP phase processing means transmit a NCP connection
permission message corresponding to the decided layer 3 protocol type and a

NCP start request of the decided layer 3 protocol type destined to said
communication terminal device.

- Claim 3 has been amended as following:

3. (Currently Amended) A packet data serving node for connecting a
communication terminal device to a public network by using Point to Point
Protocol (PPP), the packet data serving node supporting a plurality of layer 3
protocol types, comprising:

Link Control Protocol (LCP) phase processing means;

Network Control Protocol (NCP) phase processing means;

decision means for deciding a layer 3 protocol type of a reception PPP
packet; and

control means, wherein, ~~when performing a PPP connection prescribed in~~
~~RFC1661,~~ <u>when performing a PPP connection</u> in a NCP phase after an LCP
phase is completed, the control means controls the NCP phase processing
means not to transmit any NCP start request message to the communication
terminal device before receiving a NCP start request message from the
communication terminal device,

the decision means receives the NCP start request message from the
communication terminal device, and refers to a protocol field in the received NCP
start request message to decide the layer 3 protocol type used by the
communication terminal device, and

the control means sets a layer 3 protocol type decided by the decision to
said NCP phase processing means, and makes said NCP phase processing
means transmit an NCP connection permission message of the decided layer 3
protocol type and an NCP start request message of the decided layer 3 protocol
type destined to said communication terminal device.

- Claim 4 has been amended as following:

4. (Currently Amended) A packet data serving node for connecting a communication terminal device to a public network by using Point to Point Protocol (PPP), the packet data serving node supporting a plurality of layer 3 protocol types, comprising:

  Link Control Protocol (LCP) phase processing means;

  a plurality of Network Control Protocol (NCP) phase processing means;

  decision means for deciding a layer 3 protocol type of a reception PPP packet;

  statistics processing means for statistically processing a type of a layer 3 protocol used for PPP connection completion; and

  control means,

  wherein, ~~when performing a PPP connection prescribed in RFC1661,~~ when performing a PPP connection in a NCP phase after a LCP phase is completed, the control means selects said NCP phase processing means for a layer 3 protocol having a highest use frequency based on a statistics processing result by said statistics processing means, and makes said NCP phase processing means transmit an NCP start request message destined to said communication terminal device.

- Claim 5 has been amended as following:

5. (Currently Amended) A communication method for a communication system using Point to Point Protocol (PPP) wherein:

  ~~when performing a PPP connection prescribed in RFC1661,~~ when performing a PPP connection in a Network Control Protocol (NCP) phase after a Link Control Protocol (LCP) phase process is completed between a terminal device and a packet data serving node,

  said packet data serving node does not transmit any NCP start request message to said terminal device before receiving a NCP start request message from said terminal device, starts a NCP phase upon receipt of the NCP start

request message from said terminal device, and transmits an NCP connection
permission message and an NCP start request message corresponding to a
layer 3 protocol notified from said terminal device to said terminal device.

- Claim 6 has been amended as following:

6. (Currently Amended) A communication connection apparatus for connecting a
communication terminal to a public network by using Point to Point Protocol
(PPP) via a provider network, the communication connection apparatus
supporting a plurality of layer 3 protocol types, comprising:

a reception unit which receives packets from the communication terminal
via an interface of the provider network; and

a transmission unit which transmits packets to the communication terminal
via the interface of the provide network;

a control unit,

wherein, ~~when performing a PPP connection prescribed in RFC1661,~~
<u>when performing a PPP connection</u> in a Network Control Protocol (NCP) process
after a Link Control Protocol (LCP) process and an authentication process are
completed, the control unit does not transmit any NCP start request packet to the
communication terminal before receiving a NCP start request packet from the
communication terminal,

when the reception unit receives the NCP start request packet from the
communication terminal, the control unit decides a NCP layer 3 protocol type of a
received packet based on layer 3 protocol type identification information in a field
of the NCP start request packet received by the reception unit, and controls the
transmission unit to transmit a NCP connection permission packet corresponding
to the decided layer 3 protocol type and a NCP start request packet of the
decided layer 3 protocol type to the communication terminal.

Reasons for Allowance

4.   The following is an examiner's statement of reasons for allowance:

The prior art made of record, in single or in combination, fails to disclose explicitly the limitations of:

"control means, wherein, when performing a PPP connection in a NCP phase after an LCP phase is completed, the control means controls the NCP phase processing means not to transmit any NCP start request message to the communication terminal device before receiving a NCP start request message from the communication terminal device, the decision means receives the NCP start request message from the communication terminal device, and refers to a protocol field in the received NCP start request message to decide the layer 3 protocol type used by the communication terminal device, and the control means controls the NCP phase processing means to transmit a NCP connection permission message set corresponding to the layer 3 protocol type decided by the decision means and a NCP start request message of the layer 3 protocol type decided by the decision means to the communication terminal device." as disclosed in Claim 1.

"wherein, when performing a PPP connection in a NCP phase after an LCP phase is completed, the control means controls the NCP phase processing means not to transmit any NCP start request message to the communication terminal device before receiving a NCP start request message from the communication terminal device,   the decision means receives the NCP start request message from the communication terminal device, and refers to a protocol field in the received NCP start request message to decide the layer 3 protocol type used by the communication terminal device, and the control means selects one of said NCP phase processing means corresponding to the layer 3 protocol decided by the decision means, and makes said selected NCP phase

processing means transmit a NCP connection permission message corresponding to the decided layer 3 protocol type and a NCP start request of the decided layer 3 protocol type destined to said communication terminal device." as disclosed Claim 2.

"wherein, when performing a PPP connection in a NCP phase after an LCP phase is completed, the control means controls the NCP phase processing means not to transmit any NCP start request message to the communication terminal device before receiving a NCP start request message from the communication terminal device, the decision means receives the NCP start request message from the communication terminal device, and refers to a protocol field in the received NCP start request message to decide the layer 3 protocol type used by the communication terminal device, and the control means sets a layer 3 protocol type decided by the decision to said NCP phase processing means, and makes said NCP phase processing means transmit an NCP connection permission message of the decided layer 3 protocol type and an NCP start request message of the decided layer 3 protocol type destined to said communication terminal device." as disclosed in Claim 3.

"decision means for deciding a layer 3 protocol type of a reception PPP packet; statistics processing means for statistically processing a type of a layer 3 protocol used for PPP connection completion; and control means, wherein, when performing a PPP connection in a NCP phase after a LCP phase is completed, the control means selects said NCP phase processing means for a layer 3 protocol having a highest use frequency based on a statistics processing result by said statistics processing means, and makes said NCP phase processing means transmit an NCP start request message destined to said communication terminal device." as disclosed in Claim 4.

"when performing a PPP connection in a Network Control Protocol (NCP) phase after a Link Control Protocol (LCP) phase process is completed between a terminal device and a packet data serving node, said packet data serving node does not transmit any NCP start request message to said terminal device before receiving a NCP start request message from said terminal device, starts a NCP phase upon receipt of the NCP start request message from said terminal device, and transmits an NCP connection permission message and an NCP start request message corresponding to a layer 3 protocol notified from said terminal device to said terminal device." as disclosed in Claim 5

"wherein, when performing a PPP connection in a Network Control Protocol (NCP) process after a Link Control Protocol (LCP) process and an authentication process are completed, the control unit does not transmit any NCP start request packet to the communication terminal before receiving a NCP start request packet from the communication terminal, when the reception unit receives the NCP start request packet from the communication terminal, the control unit decides a NCP layer 3 protocol type of a received packet based on layer 3 protocol type identification information in a field of the NCP start request packet received by the reception unit, and controls the transmission unit to transmit a NCP connection permission packet corresponding to the decided layer 3 protocol type and a NCP start request packet of the decided layer 3 protocol type to the communication terminal." as disclosed in Claim 6.

"wherein, in a Network Control Protocol (NCP) occurring after completing a Link Control Protocol (LCP) process and an authentication process, the control unit decides a type of layer 3 protocol to be used for the communication with the communication terminal based on a statistics processing result performed by the statistics processing unit, and transmits a NCP start request packet of the decided layer 3 protocol type from the transmission unit, wherein when the reception unit receives a NCP start request packet of the decided layer 3 protocol

from the communication terminal, a control unit controls the transmission unit to transmit a connection permission packet of the decided layer 3 protocol to the source communication terminal of the NCP start request packet." as disclosed in claim 8.

5.   Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

6.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew C. Lee whose telephone number is (571)272-3131. The examiner can normally be reached on Monday through Friday from 8:30am - 5:00pm.

          If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on (571) 272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

          Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service

Representative or access to the automated information system, call 800-786-

9199 (IN USA OR CANADA) or 571-272-1000.

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